REMARKS

Claims 1-18 are in this application and are presented for consideration. By this Amendment, Applicant has amended claims 1, 4 and 14. Applicant has added new claims 15-18.

Claim 14 has been objected to because of minor informalities. Applicant has amended claim 14 so that it now is based on claim 13. Applicant would like to thank the Examiner for the careful review of the claims.

Claims 1 and 2 have been rejected under 35 U.S.C. 102(b) as being anticipated by Pinchon (FR 2712833 A).

Pinchon discloses an assembly line comprising a succession of posts 17, 21, 24 placed and held in the geometry of the different constituents of a subassembly. The assembly finishing posts 23, 24 are inserted between the geometrical assembly posts. Handling robots 9, 10, 11, 12, 13, 14, 15, 16 are located between each post for ensuring displacement of the subassembly during the course of assembly from one post to another. Each post is placed in a location belonging to an isolated location 1-8 divided around a central handling robot capable of serving them in a random manner. Two successive isolated locations have a common location 20, 22, 25. Two successive locations 5, 6 are connected by an additional handler 29 extending between one location 28 of one location 5 and a location 30 of the other location 6.

Applicant has amended claim 1 to include the features of at least one robot having a joining tool arranged at a joining station for carrying out joining operations. Applicant has also added to claim 1 that one workstation is designed as a workpiece support and another station

is designed as a joining station. These features along with the current features already found in claim 1 were found to be patentable in the corresponding European patent application EP 15 31967 B1.

Pinchon fails to teach or suggest the combination of a workstation in which a workpiece is picked up by a turning unit and moved to a welding workstation where the workpiece is welded. At most Pinchon discloses a robot having a working area that intersects another working area of another robot at one or more points. In contrast to the present invention Pinchon fails to disclose that the workpieces are joined or welded at any point along the assembly line. Pinchon merely discloses that the workpieces are passed along the assembly line. Pinchon fails to disclose any sort of joining tool located along the assembly line. In contrast to Pinchon, the present invention provides a different approach. In the present invention the turning unit picks up the workpiece at one workstation and transfers the workpiece to a welding workstation so that the workpiece can be welded by a joining tool. Pinchon fails to disclose that any of the workpieces are welded by a joining tool. As such the prior art as a whole teaches a different approach and fails to disclose the features of the present invention. Accordingly, Applicant respectfully requests that the Examiner favorably consider claims 1 as now presented and all claims that respectively depend thereon.

Claims 1, 2 and 5-14 have been rejected under 35 U.S.C. 102(b) is being anticipated by Kaczmarek et al. (US 5,152,050).

Kaczmarek et al. relates to a non-synchronous assembly system. An automobile body is transferred by a hook and carrier assembly, which includes a hook 12 and carrier 14. An

overhead power and free conveyor system 16 is provided. The hook 12 is suspended from a plurality of trolleys 13. The carrier 14 is configured to be processed by a predetermined series of stations. The hook and carry assembly enters a load station 18 for loading an engine compartment 15 and a front floor pan 15. The engine compartment is delivered by conveyor means 20 and loaded by an industrial robot 22. The hook and carrier assembly advances to the next workstation 26 where a rear floor pan 19 is delivered by delivery means 25 and loaded. Two work stations are provided at different locations along the assembly line. One work station is welded station 50 and the other work station is an underbody weld station 62. A lift table 52 located under the carrier 14 supports one of three underbody subassembly tooling fixtures 54. Each fixture 54 raises a particular model clear of the carrier 14. The fixture 54 then locates and clamps the loose subassemblies. Upper fixtures 56 are mounted on a multi-position fixture exchange turntable and storage system 28. The hook 12 and carrier 14 assembly then proceeds through the underbody respot weld station 62.

Kaczmarek et al. fails to teach or suggest the combination of turning stations having working areas that intersect each other at work stations. At most Kaczmarek et al. discloses a hook and carrier assembly that advances the subassembly of a motor vehicle from one workstation to another workstation along an assembly line. Kaczmarek et al. merely discloses a welding station 50 and an underbody weld station 62 located along the assembly line. The present invention takes a different approach. In the present invention the working area of one turning unit intersects the working area of another turning unit to define two working stations. One working station of the present invention is provided for supporting the workpiece before

the turning unit transfers the workpiece to the other work station to be welded. In the present invention the turning station has at least two turning units arranged next to one another. Kaczmarek et al. fails to disclose that the working area of one turning unit intersects the working area of another turning unit. Further Kaczmarek et al. fails to disclose that turning units are arranged next to one another along the assembly line. At most Kaczmarek et al. discloses a typical automobile assembly line and fails to suggest robots having overlapping working ranges that intersect at two locations to form work stations as in the present invention. As such the prior art as a whole teaches a different approach and fails to suggest the combination of features as claimed. Accordingly, Applicant respectfully requests that the Examiner favorably consider claim 1 as now presented and all claims that respectively depend thereon.

Claims 1-3, 7, 9 and 11-14 have been rejected under 35 U.S.C. 102(e) as being anticipated by Laurino (US 2003/0183361 A1).

Laurino discloses an automated casting system. The casting system comprises a plurality of casting stations A, B, C, D aligned along an axis defined as a longitudinal axis and arranged side-by-side in pairs. In each casting station there is a casting machine 10a, 10b, 10c, 10d. A table 20 is disposed between the pairs of casting stations A, B and C, D is rotatable about a vertical axis by means of a geared motor. An apparatus 30 transfers liquid metal from a furnace which is in the collection position E on the rotary table 20 to the individual casting machines 10a-10d. The casting apparatus 30 comprises a straight horizontal guide 31and a carriage 32 that slides along the guide 31 and carries a robotic casting device 33. The system

includes an automated apparatus in the form of a Cartesian robot for transferring the castings from the casting positions A-D to a discharge station F. A transfer apparatus 40 comprises a straight horizontal guide 41 substantially parallel to guide 31 of the casting apparatus 30. The guide 41 extends above the casting stations A-D and the discharge station F. A carriage 42 slides along the guide 41 and carries a robotic gripping device 43 for collecting the castings from the machines 10a-10d. The robotic gripping device 43 performs combined rotational and translational movement along and about seven geometrical axes.

Laurino fails to teach or suggest the combination of a turning station having at least two work stations for carrying out different operations simultaneously wherein one of the work stations is a joining station. In the present invention a turning unit transfers a workpiece from one work station to another work station so that the workpiece can be welded or joined by a robot having a joining tool arranged at the joining work station. In contrast to the present invention, Laurino fails to weld any workpiece. At most Laurino teaches a casting system that transports liquid metal from one casting section to another casting section. Laurino clearly discloses that the automatic casting transfer apparatus extends between the casting stations and a discharge station. In Laurino the automatic casting transfer apparatus is provided with a robotic device for moving grippers for gripping and transferring the castings from one of the casting sections to the discharge station. Figure 1 of Laurino fails to show any apparatus for welding a workpiece in the casting apparatus. Further Laurino fails to disclose a turning station having at least two multiaxially movable turning units arranged next to one another with movable turning units working areas that intersect each other. The casting apparatus 30 and

transfer apparatus 40 of Laurino are parallel to one another and fail to have working areas that intersect each other. As such the prior art as a whole takes a different approach than the present invention and fails to suggest the combination of features as claims. Accordingly, Applicant respectfully requests that the Examiner favorably consider claim 1 as now presented and all claims that respectively depend thereon.

Claims 1, 2, 7-9, 11, 12 and 14 have been rejected under 35 U.S.C. 102(e) as being anticipated by Angel (US 2002/0134815 A1).

Angel discloses an apparatus 10 for the manufacturing of parts 12 by a plurality of robots 14 positioned on a turntable 16 for rotation about an axis 18. The robots 14 are positioned at different locations based along the outer periphery of the turntable 16. There are an equal number of robots 14 to the number of workstations 20 positioned around the periphery of the turntable 16. The turntable 16 has eight robots 14a-14f disposed at evenly spaced angular positions around the outer peripheral edge of the turntable 16. The robots 14a-14f are independently movable with respect to one another and are movable independent of movement of the turntable 16. Robot 14a is positioned at workstation 20a for unloading parts that have been processed. After unloading a part, the turntable 16 is rotated about the axis 18 to position the robot 14a at the position previously occupied by robot 14b. In this position the robot has access to a tool change work station 20b to change the tooling as required for the particular parts be processed next. The turntable 16 is rotated again about the axis 18 to move the robot 14a to the position once occupied by robot 14c. When in this position the robot picks a part to be processed at the part loading fixtures 22 at workstation 20c. The turntable 16 is rotated

about the axis 18 to bring the robot 14a into the position previously held by robot 14d corresponding to workstation 20d. The robot 14a then positions part 12 into the fixtures 22d. The processing can include assembly and/or welding by additional robots 24a-24d disposed at workstation 20d.

Angel and fails to teach or suggest a turning station having at least two multiaxially movable turning units with movable turning units working areas, which intersect each other at two work stations. At most Angel discloses a robotic turntable that changes position to move each robot mounted thereto from one workstation to another workstation. Although Angel discloses that the robots 14 are movable relative to the turntable 16, Angel fails to disclose that the working range of one robot overlaps the working range of another robot at a workstation. Angel clearly discloses that the working areas of the adjacent robots 14 always intersect at a single point of each workstation 20. The present invention takes a different approach. In the present invention the turning unit has a working area that intersects the working area of another turning unit to form two workstations. One workstation of the present invention supports the workpiece so that the turning unit can grip the workpiece and transfer it to the other workstation so that the workpiece can be welded. In contrast to the present invention, Angel discloses that a robot 14 picks up a part and the turntable 16 is then moved to another workstation 20 so that the part can be processed. In Angel, the part is merely turned by the turntable 16 from workstation to workstation and the part fails to be passed from one robot mounted on the turntable 16 to another robot mounted on the turntable 16. In the present invention a turning unit transfers the workpiece to the welding workstation so that the

workpiece can be welded. Angel fails to disclose that any part is transferred to from one robot on the turntable to another robot on the turntable and fails to disclose that the working ranges of the robots overlap. As such the prior art as a whole fails to suggest the features of the present invention. Accordingly, Applicant respectfully requests that the Examiner favorably consider claim 1 and all claims that respectively depend thereon.

Claim 4 has been rejected under 35 U.S.C. 103(a) as unpatentable over Kaczmarek et al.

Although Kaczmarek et al. teaches an assembly system, the references as a whole as previously discussed above fail to suggest the combination of features claimed. Specifically, Kaczmarek et al. fails to teach turning stations having working areas that intersect each other at work stations. The references do not suggest the invention and therefore all claims define over the prior art as a whole.

Claim 4 has been rejected under 35 U.S.C. 103(a) as unpatentable over Angel. Although Angel teaches a robotic turntable, the references as a whole as previously discussed above fail to suggest the combination of features claimed. Specifically, Angel fails to disclose the combination of robots having working ranges that overlap at two locations. The references do not suggest the invention and therefore all claims define over the prior art as a whole.

Applicant has added new claims 15-18. New independent claim 15 provides for a plurality of welding machining stations and a plurality of turning stations. The turning stations have turning units, which have a defined working area. The welding machining stations have welding robots, which have a defined working area. The working area of the turning units

intersects the working area of the welding robots in at least two points to define work stations. One work station is provided for supporting the workpiece before the turning unit picks up the workpiece and passes it to the welding work station. A manual or automatic feed presents the workpieces to the turning unit. A manual or automatic feed removes the workpieces once the workpieces have been completed. New independent claim 17 provides different claim language for the features found in claim 1 and provides for the manual automatic feed means to present the workpieces to the first turning. The prior art as a whole fails to disclose such features.

Further action on the merits is requested.

Respectfully submitted
for Applicant,

By:_____
John James McGlew
Registration No. 31,903
McGLEW AND TUTTLE, P.C.

- and -

By:_____
Brian M. Duncan
Registration No. 58,505
McGLEW AND TUTTLE, P.C.

JJM:BMD
71613-11
Attached: Petition for One Month Extension of Time

DATED: January 8, 2007
BOX 9227 SCARBOROUGH STATION
SCARBOROUGH, NEW YORK 10510-9227
(914) 941-5600

SHOULD ANY OTHER FEE BE REQUIRED, THE PATENT AND TRADEMARK OFFICE IS HEREBY REQUESTED TO CHARGE SUCH FEE TO OUR DEPOSIT ACCOUNT 13-0410.